Amendments to claims:

1. (Currently amended) A method for real time detecting, locating and visualizing UV emittance caused by electrical discharge exhibited on electrical equipment in an environment illuminated by at least one of daytime outdoor illumination and equivalent artificial indoor illumination, the method comprising:

simultaneously acquiring through a common aperture and in a common optical axis a scene suspected of exhibiting electrical discharge with ~~two separate imaging units,~~

[A] a first solar blind UV (SBUV) imaging unit imaging in the SBUV spectral band and comprising a solar blind filter, image intensified sensor, and a UV photocathode to generate a first image that illustrates SBUV emittance in the scene, and

[B] a second~~, true color~~ visible spectrum (a.k.a., true color) imaging unit imaging in the visible spectral range to generate a second image that illustrates the visible spectrum (*a.k.a.*, true color) image in the scene; and

combining in real time the first image and the second image ~~images as obtained by said simultaneous imaging through a common aperture and in a common optical axis~~, by overlaying in real time ~~a~~ the first image ~~obtained from said first SBUV imaging unit~~ over ~~a~~ the second ~~true color visible~~ image ~~obtained from said second imaging unit thereby forming~~ to create one combined ~~and exactly registered true color~~ visual image showing in real time the location and nature of the SBUV emittance of the electrical discharge on the visible spectrum (*a.k.a.*, true color) representation of the scene ~~in its exact position within the electrical equipment background and~~ with no parallax.

2. (Previously presented) A method according to claim 1 wherein the combining of said first and second images is carried out by optical combining means, allowing viewing of the combined visual image.

3. (Previously presented) A method according to claim 1 further comprising transferring the combined visual image into electronic recording and/or displaying means for recording and/or displaying the combined visual image.

4. (Original) A method according to claim 3 wherein the electronic recording and/or displaying means is a videotape and a video monitor.

5. (Cancelled)

6. (Currently Amended) A method according to claim 1 further comprising, first acquiring in at least one of daytime outdoor illumination and equivalent artificial indoor illumination an image of the scene ~~electrical equipment~~ having a spectrum spanning at least the visible spectral range and the SBUV spectral band, and then separating the spectrum of the acquired image, wherein an UV spectrum of the acquired image in the SBUV spectral band is transferred into said first SBUV imaging unit, and the acquired image in the visible spectral range is transferred into said second ~~, true color~~ visible spectrum (*a.k.a.*, true color) imaging unit.

7. (Cancelled).

8. (Currently amended) Apparatus for real time detecting, locating and visualizing in at least one of daytime outdoor illumination and equivalent artificial indoor illumination an UV emittance caused by electrical discharge exhibited on electrical equipment, comprising:

image acquiring means with a SBUV imaging unit and a true color visible imaging unit ~~two separate imaging units~~, for

A. acquiring through a same aperture of the apparatus and along a common optical axis an image of a scene that includes electrical equipment suspected of exhibiting electrical discharge, the image spanning at least a visible spectrum and a Solar Blind UV (SBUV) spectrum, and

B. ~~for~~ simultaneously providing

i. a SBUV image from the scene into a ~~an~~ SBUV imaging unit, and

ii. a visible spectrum (*a.k.a.*, true color) image from the scene into a visible spectrum (*a.k.a.*, true color) imaging unit;

said SBUV imaging unit

(A) receives the scene's SBUV image from the image acquiring means,

(B) comprising:

a. a solar blind ultraviolet optical filter allowing transmittance of optical radiation in a solar blind UV spectral range only, and absorbing optical radiation in all other spectral regions; and

b. a SBUV image providing means comprising an image intensified SBUV image sensor for receiving the optical radiation in the SBUV spectral range only, passed through said solar blind ultraviolet optical filter, and

(C) producing a first visual image of the SBUV emittance from the scene ~~electric discharge~~, being a solar blind UV emittance image;

said ~~true color~~ visible spectrum (*a.k.a.*, true color) imaging unit receiving said scene's visible spectrum (*a.k.a.*, true color) image ~~second image of the electrical equipment~~ from the image acquiring means, and producing a second ~~true color~~ visible spectrum (*a.k.a.*, true color) image, representing the scene's visible spectrum (*a.k.a.*, true color) image ~~visible background scenery of the electrical equipment~~; and

combining means for

a. receiving the first visual image of the SBUV emittance from the SBUV imaging unit and the second ~~true color~~ visible spectrum (*a.k.a.*, true color) image from the visible imaging unit, and

b. combining in real time by overlaying said first visual image of the SBUV emittance over said second visible spectrum (*a.k.a.*, true color) image ~~thereby producing~~ to create one combined ~~and exactly registered true color~~ visual image showing in real time the

location and nature of the SBUV emittance of the electrical discharge on the visible spectrum (*a.k.a.*, true color) representation of the scene ~~in its exact position within the electrical equipment background and~~ with no parallax.

9. (Currently amended) Apparatus according to claim 8 wherein the image acquiring means comprises ~~two~~

a first image acquiring ~~elements, a first~~ element providing ~~the first image of~~ the SBUV image from the scene ~~emittance~~ into the SBUV imaging unit, and

a second image acquiring element providing the visible spectrum (*a.k.a.*, true color) ~~second~~ image from the scene ~~of the electrical equipment~~ into the ~~true color~~ visible spectrum (*a.k.a.*, true color) imaging unit imaging unit.

10. (Previously presented) Apparatus according to claim 9 wherein the first and second image acquiring elements incorporate optical lenses.

11. (Currently amended) Apparatus according to claim 8 wherein the solar blind ultraviolet optical filter is positioned at a location selected from the group consisting ~~one~~ of before an optical lens of the SBUV imaging unit, after the optical lens of the SBUV imaging unit, and incorporated within the optical lens of the SBUV imaging unit.

12. (Currently amended) Apparatus according to claim 8 wherein the image acquiring means comprises a beamsplitter receiving optical beams from the scene along said common optical axis, and splitting the received optical beams so that the beams spanning at least the SBUV emittance spectrum of the electrical discharge are directed towards the SBUV imaging unit and the beams spanning at least the visible spectrum emanating from the electrical equipment scene are directed towards the ~~true color~~ visible spectrum (*a.k.a.*, true color) imaging unit.

13. (Original) Apparatus according to claim 12 wherein the beamsplitter is a dichroic beamsplitter.

14. (Currently amended) Apparatus according to claim 8 wherein the SBUV imaging unit further comprises a first lens receiving the radiation in the UV spectral range passing through the solar blind ultraviolet optical filter, and producing by said image intensified SBUV image sensor the first visual image of the SBUV emittance from the scene ~~solar blind UV image of the UV emittance of the electrical discharge~~, wherein the electrical equipment is suspected of exhibiting electrical discharge.

15. (Currently amended) Apparatus according to claim 14 wherein said first visual image, which is produced by the image intensified SBUV image sensor, is located at an image plane of the first lens, said image sensor creates a visual image of the first visual image of the SBUV emittance from the scene ~~solar blind UV image of the UV emittance of the electrical discharge~~.

16. (Previously amended) Apparatus according to claim 15 wherein the SBUV image sensor contains a fluorescent screen.

17. (Cancelled).

18. (Currently amended) Apparatus according to claim 15, wherein the image intensified SBUV image sensor is selected from among a group of sensors consisting of BCCD, EBCCD, ICCD, MCP-PMT having multianode, and MCP-PMT having position sensitive anode output, for producing first electronic signals describing said first visual image of the SBUV ~~image~~ emittance from the scene.

19. (Currently amended) Apparatus according to claim 8 wherein the combining of the first visual image of the solar blind UV emittance from the scene ~~of the electrical discharge~~ and the second visible spectrum (*a.k.a.*, true color) image from the scene ~~of the electrical equipment~~ is carried out by a beamsplitter simultaneously receiving said first and second images.

20. (Currently amended) Apparatus according to claim 8, wherein the true color visible imaging unit comprises an image sensor selected from among a group of sensors consisting of CCD, CMOS, and CID, receiving said second visible spectrum (*a.k.a.*, true color) image from the scene, and producing second electronic signals describing said second ~~true color~~ visible spectrum (*a.k.a.*, true color) image.

21. (Previously presented) Apparatus according to claim 8, wherein the combined visual image is obtained by at least one of arithmetic mixing, non-arithmetic mixing, luminance keying and chroma keying, for combining first and second electronic signals representing the first and second images, respectfully.

22. (Currently amended) Apparatus according to claim 8 further comprising electronic recording and/or displaying means for recording and/or displaying the combined visual ~~true color~~ image.

23. (Previously presented) Apparatus according to claim 22 wherein the electronic recording and/or displaying means is a videotape or a video monitor.

24. (Currently Amended) Apparatus according to claim 8 wherein the ~~true color~~ visible spectrum (*a.k.a.*, true color) imaging unit comprises only passive optical elements and the SBUV imaging unit comprises passive optical elements and the image intensified SBUV image sensor ~~a UV image intensifier~~, wherein both said visible and SBUV separate imaging units acquire their images from said common optical axis and both apply same effective magnification.

25. (Original) Apparatus according to claim 24 made in a monocular form.

26. (Original) Apparatus according to claim 24 made in binocular form.

27. (Original) Apparatus according to claim 8 further comprising stills camera means for recording the combined visual image on a stills camera film.

28. (Currently Amended) Apparatus according to claim 21 further comprising a processing unit for processing at least one of the first and second electronic signals for at least one of improving the contrast between the first visual image of the SBUV emittance from the scene and the background scenery in the combined visual image for the elimination of noise, the identification of UV emitters in the scene, and the capture of transient UV events in the scene.

29. (Original) Apparatus according to claim 28 wherein the processing unit is a digital processing unit.

30. (Original) Apparatus according to claim 28 wherein the processing unit is an analog processing unit.

31. (Previously presented) Apparatus according to claim 28 further comprising means for providing an alarm as to the detection of UV emittance which is above a predefined threshold level.

32. (Previously presented) Apparatus according to claim 28 further comprising means for initiating action as to the detection of UV emittance which is above a predefined threshold level.

33. (Cancelled)

34. (Previously presented) Apparatus according to claim 32 wherein the action is documentation of UV emitting events in the scene.

35. (Currently amended) A method for real time detecting, locating, and visualizing in at least one of daytime outdoor illumination and equivalent artificial indoor illumination UV emittance in a scene having ~~on~~ electrical equipment caused by electrical discharge, and emittance of IR in a scene ~~of the electrical equipment~~ comprising:

simultaneously imaging through a same aperture and in a common optical axis the IR of the electrical equipment and the SBUV emittance of the electrical discharge with ~~two separate imaging units,~~

a first solar blind UV (SBUV) imaging unit imaging in the SBUV spectral band and comprising a solar blind filter, image intensified sensor, and a UV photocathode for forming and displaying an image of said UV emission, and

a second IR imaging unit for visually forming and displaying an image of the IR scenery; and

combining in real time the images as obtained by said simultaneous imaging through ~~a~~ the same aperture and in ~~a~~ the common optical axis, by overlaying in real time the image formed by said SBUV imaging unit over the image formed by said IR imaging unit, thereby forming one combined ~~and exactly registered~~ visual image showing in real time the location and nature of the SBUV emittance of the electrical discharge ~~and~~ on the IR emittance representation of the scene ~~of the electrical equipment in their exact positions within the scenery~~ with no parallax.

Claims 36 to 58. (Cancelled)

59. (Currently Amended) Apparatus according to claim 8, wherein the image acquiring means comprises an optical lens which acquires SBUV and visible light beams from said common optical axis and transmits the SBUV light beams spanning the SBUV image towards the SBUV imaging unit, and a mirror in front of a central portion of said lens, for reflecting light in the visible spectrum towards the true color visible imaging unit.

60. (Currently amended) Method according to claim 1, wherein the electrical discharge is selected from the group consisting of partial discharge~~, corona~~ and arcing.

61. (Currently amended) Apparatus ~~System~~ according to claim 8, wherein the electrical discharge is selected from the group consisting of partial discharge~~, corona~~ and arcing.

62. (Currently amended) Method according to claim 35, wherein the electrical discharge is selected from the group consisting of partial discharge~~, corona~~ and arcing